

Retrieval of Water Vapor Profiles from Atmospheric Radio-Occultations.

Manuel . de la Torre Ju\`arez

Peter Mattias Nilsson

Jet Propulsion Laboratory/Caltech , M/S 238-600 4800 Oak  
Grove Dr., Pasadena, CA 91109, United States

Atmospheric radio-occultations provide high-resolution vertical profiles of atmospheric refractivity. Using the GPS frequencies for the occultations allows extraction of atmospheric state variables from areas within cloudy regions. The vertical resolution is ideal to detect small water vapor structures.

Since present retrievals of water vapor still rely heavily on the use of ancillary data like ECMWF or NCEP, we illustrate a novel method to extract water vapor with high vertical resolution, using the refractivity profiles without ancillary data. We also discuss the estimated accuracies and sources of error.